Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer system, comprising:

a host bridge;

a plurality of CPUs coupled to said host bridge;

a system resource coupled to said host bridge; and

~~an output device coupled to said CPUs;~~

wherein said host bridge includes storage for CPU task priorities, each CPU being capable of informing the host bridge of its task priority, and said host bridge uses said task priorities to decide ~~when deciding~~ how to allocate said system resource to ~~said CPUs~~a CPU from among a plurality of the CPUs that request access to said system resource.

2. (Original) The computer system of claim 1 wherein said storage in said host bridge includes a table in which said host bridge stores said task priorities.

3. (Original) The computer system of claim 2 wherein said table includes an entry for each of said CPUs, a task priority for a CPU being stored in the entry corresponding to that CPU.

4. (Currently Amended) The computer system of claim 1 wherein each of said CPUs transmits its task priority to said host bridge via a cycle on a bus interconnecting said CPU and said host bridge.

5. (Original) The computer system of claim 4 wherein said cycle also includes a request by the CPU for access to said system resource.

6. (Original) The computer system of claim 4 wherein said cycle is separate from a cycle in which said CPUs request access to said system resource.

7. (Original) The computer system of claim 1 wherein said system resource comprises memory.

8. (Original) The computer system of claim 1 wherein said system resource includes a peripheral device coupled to said host bridge.

9. (Original) The computer system of claim 1 wherein said host bridge uses said task priorities as the sole criterion for deciding how to allocate said system resource.

10. (Original) The computer system of claim 1 wherein said host bridge decides how to allocate said system resource based on said task priorities and based on an anti-starvation algorithm.

11. (Original) The computer system of claim 1 wherein said host bridge decides how to allocate said system resource based on said task priorities and based on a tie breaking algorithm that is used when two or more CPUs have the highest, yet equal, task priority.

12. (Original) The computer system of claim 1 wherein said host bridge decides how to allocate said system resource based on an algorithm that does not involve said task priorities, but uses said task priorities to decide the resource allocation when the non task priority-based algorithm is unable to decide between competing CPU requests for the system resource.

13. (Original) The computer system of claim 1 wherein said host bridge decides how to allocate said system resource based on said task priorities and based on other criteria.

14. (Withdrawn) A computer system, comprising:
a switch; and
a plurality of nodes coupled to said switch;
wherein said switch receives messages from said nodes, one or more of said messages including a priority value, and said switch routes the messages based on said priority values.

15. (Withdrawn) The computer system of claim 14 wherein said switch uses said priority values as the sole criterion for deciding how to route said message.

16. (Withdrawn) The computer system of claim 14 wherein said switch decides how to route said messages based on said priority values and based on an anti-starvation algorithm.

17. (Withdrawn) The computer system of claim 14 wherein said switch decides how to route said messages based on said priority values and based on a tie breaking algorithm that is used when messages from two or more nodes have the highest, yet equal, priority value.

18. (Withdrawn) The computer system of claim 14 wherein said switch decides how to route said messages based on an algorithm that does not involve said priority values, but uses said priority values to decide how to route said messages when the non priority value-based algorithm is unable to decide between competing node messages.

19. (Withdrawn) The computer system of claim 14 wherein said switch decides how to route said messages based on said priority values and based on other criteria.

20. (Currently Amended) A method of arbitrating for access to system resources, comprising:

(a) receiving a plurality of cycle requests from a plurality of CPUs, each cycle request requesting access to a system resource on behalf of a CPU;

(b) receiving task priorities associated with each of said CPUs; and

(c) granting access to ~~a~~ the system resource based, at least in part, on said task priorities.

21. (Original) The method of claim 20 wherein (c) includes using task priorities as the sole criterion for deciding how to grant access to a system resource.

22. (Original) The method of claim 20 wherein (c) includes using said task priorities and an anti-starvation algorithm to grant access to the system resource.

23. (Original) The method of claim 20 wherein (c) includes granting access also based on a tie breaking algorithm that is used when two CPUs have equal task priorities.

24. (Original) The method of claim 20 wherein (c) includes granting access based on an algorithm that initially does not involve said task priorities, but uses said task priorities when the non task priority-based algorithm is unable to how to grant access.

25. (Original) The method of claim 20 wherein (c) also includes granting access based on other criteria.

26. (Original) The method of claim 20 wherein said system resource includes memory.

27. (Original) The method of claim 20 wherein said system resource includes a CPU.

28. (New) A system, comprising:

a bridge;

a plurality of CPUs coupled to said bridge; and

a system resource coupled to said bridge;

wherein each CPU is capable of informing the bridge of its task priority, and said bridge uses said task priorities when deciding how to allocate said system resource to said CPUs; and

wherein each of said CPUs is capable of transmitting its task priority to said host bridge via a cycle on a bus interconnecting said CPU and said host bridge, said cycle also includes a request by the CPU for access to said system resource.

29. (New) The system of claim 28 wherein said bridge decides how to allocate said system resource based on said task priorities and based on an anti-starvation algorithm.

30. (New) The system of claim 28 wherein said bridge decides how to allocate said system resource based on an algorithm that does not involve said task priorities, but uses said task priorities to decide the resource allocation when the non task priority-based algorithm is unable to decide between competing CPU requests for the system resource.

31. (New) A system, comprising:

a bridge;

a plurality of CPUs coupled to said bridge;

a system resource coupled to said bridge; and

wherein each CPU is capable of informing the bridge of its task priority, and wherein said bridge decides how to allocate said system resource based on said task priorities and based on an anti-starvation algorithm.

32. (New) The system of claim 31 wherein each of said CPUs is capable of transmitting its task priority to said bridge via a cycle, and said cycle also includes a request by the CPU for access to said system resource.

33. (New) A system, comprising:

a bridge;

a plurality of CPUs coupled to said bridge;

a system resource coupled to said bridge; and

wherein each CPU is capable of informing the bridge of its task priority, and wherein said bridge decides how to allocate said system resource based on an algorithm that does not involve said task priorities, but uses said task priorities to decide the resource allocation when the non task priority-based algorithm is unable to decide between competing CPU requests for the system resource.

34. (New) The system of claim 33 wherein each of said CPUs is capable of transmitting its task priority to said bridge via a cycle on a bus interconnecting said CPU and host bridge and said cycle also includes a request by the CPU for access to said system resource.